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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,259	08/31/2006	Nicholas James Adams	TS5590US	9318

23632 7590 05/29/2009

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EXAMINER	
SINGH, PREM C	
ART UNIT	PAPER NUMBER
1797	
MAIL DATE	DELIVERY MODE
05/29/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,259	ADAMS ET AL.	
	Examiner	Art Unit	
	PREM C. SINGH	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 12-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 12-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/30/2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8 and 12-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert et al (WO 02/070627 A2) in view of Chen et al (US Patent 4,851,109).

4. With respect to claim 1, Gilbert discloses a process for making multiple grades of base oil products (See page 2, lines 3-7). The process comprises following steps:

(a) hydrocracking a Fischer-Tropsch (FT) derived feed boiling above 370°C, utilizing a hydrocracking catalyst comprising a porous support material such as silica, alumina, or silica-alumina, with an added metal having hydrogenation/dehydrogenation function to thereby provide a conversion level of 25 to 70 wt% and obtaining an effluent (See page 2, lines 11-17, 33-34; page 6, lines 1-13; page 21, lines 23-24);

(b) distilling of the effluent as obtained in step (a) into at least one middle distillates product and a full range residue boiling between 330 and 400°C (See page 7, lines 20-25; page 21, lines 25-27);

(c) catalytically dewaxing the full range residue boiling between 330 and 400°C with a dewaxing catalyst comprising a dealuminated extrudate of a zeolite and a low acidity refractory binder material and Group VIII metal of either platinum or palladium that is present in the said dewaxing catalyst in the range from 0.005% to 5% by weight, thereby obtaining a dewaxed oil (See page 6, lines 14-19; page 8, lines 27-28; page 9, lines 2-26; page 10, lines 3-26; page 11, lines 19-22; column 12, lines 2-4; page 22, lines 5-9);

(d) distilling the dewaxed oil obtained in step (c) into one or more gas oil fractions and a base oil precursor fraction (See page 21, lines 10-11);

(e) hydrofinishing the gas oil fraction obtained in step (d) to provide a heavy base oil (See page 11, lines 7-18).

Gilbert invention does not specifically disclose use of MTW zeolite, however, the invention does disclose use of several intermediate pore zeolites, for example ZSM-5, ZSM-12, ZSM-22, ZSM-23, ZSM-32, ZSM-35 and ZSM-48 (See page 9, lines 11-23). It is to be noted that ZSM-12 has MTW-type topology (evidenced by Van Ballegoy et al: US Patent 6,576,120: column 4, lines 30-31).

Gilbert invention does not appear to specifically disclose the weight ratio of zeolite to the binder material, however, the invention does disclose that the catalyst is obtained by contacting an extrudate of zeolite and binder with an aqueous solution of

fluorosilicate salt (See page 22, lines 7-9). Obviously, the amounts of binder and zeolite are result-effective variables to prepare a catalyst with proper formulation. Thus, one skilled in the art would optimize the weight ratio of zeolite to the binder material by routine experimentation. See *In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)*.

Gilbert does not specifically disclose the boiling range of gas oil fraction obtained in step (d), however, since a typical gas oil has a typical boiling range, it is expected that the gas oil fraction obtained in step (d) will inherently have similar boiling range as claimed.

Gilbert invention does not specifically disclose using a mineral crude derived feed, however, the invention does disclose that in addition to the FT product also other fractions may be additionally processed in step (a) (See page 4, lines 29-31).

Chen discloses a process for making base oil products using a hydrocarbon feed, operating conditions and catalyst similar to Gilbert (See abstract). Chen also discloses that feed can be of a high boiling point petroleum origin or a product from Fischer Tropsch (FT) synthesis (See column 6, lines 20-25). Obviously, feed stocks from petroleum origin and FT synthesis for the production of multiple grades of base oil products are equivalent (evidenced by Moore, Jr. US Patent 6,583,186: column 5, lines 65-67; column 6, lines 1-6 and also by Miller, US Patent 6,663,768: column 4, lines 65-67; column 5, lines 1-4).

Gilbert invention does not specifically disclose using a large pore zeolite in the hydrocracking catalyst.

Chen discloses that acidic functionality in the hydrocracking catalyst is provided either by a large pore amorphous material such as alumina, silica-alumina or silica or a large pore zeolite (See column 9, lines 7-13).

Thus, it would have been obvious to one skilled in the art at the time of invention to modify Gilbert invention and use a mineral crude derived feed as disclosed by Chen, because feed stocks from both sources (FT and mineral crude derived) are expected to produce multiple grades of base oil products. It would also have been obvious to substitute silica, alumina with a large pore zeolite because both are expected to be functionally similar. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. See *In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982)*.

5. With respect to claim 2, Gilbert discloses initial boiling point of the feed to step (a) should be above 340^{o}C (See page 12, lines 23-25). Thus, it is expected that more than 20 wt% of the compounds present in the vacuum gas oil should boil in the claimed range.

6. With respect to claim 3, Gilbert discloses that a portion of the fraction boiling below gas oil fraction is recycled to step (b) to be mixed with the effluent before distilling (See figure and page 13, lines 24-25).

7. With respect to claim 4, Gilbert discloses that a portion of full range residue obtained in step (b) is recycled to step (a) to be mixed with the feed before hydrocracking (See figure [stream 21] and page 13, lines 4-5).

8. With respect to claim 5, Gilbert discloses that hydroisomerization step of a FT product is especially directed to prepare a base oil precursor fraction having the desired properties (See page 1, lines 19-21). Gilbert also discloses that the isomerized product has a content of non-cyclic iso-paraffins of more than 80 wt% (See page 1, lines 8-9). Thus, it would have been obvious to one skilled in the art at the time of invention to modify Gilbert invention and add a hydroisomerized paraffin fraction to the feed for dewaxing.

9. With respect to claim 6, Gilbert discloses that the dewaxed oil of step (c) is subjected to an additional hydrofinishing step (See page 11, lines 7-12).

10. With respect to claim 7, Gilbert discloses that the hydrogen partial pressure in step (c) is 10-200 bar (See page 10, lines 27-30).

11. With respect to claim 8, Gilbert discloses that the heavy base oil obtained in step (e) comprises more than 95 wt% saturates and has a viscosity index of 103 and 122 (See page 18, Table 1).

12. With respect to claim 12, Gilbert discloses that the zeolite content of dewaxing catalyst is 30 wt% (See page 17, lines 26-30).

13. With respect to claims 13 and 16, Gilbert discloses that the low acidity refractory binder material is selected from silica, zirconia, titanium dioxide, germanium dioxide, boria and mixtures of two or more thereof (See page 10, lines 5-8). Gilbert also discloses that silica is essentially free of alumina (See page 10, lines 3-5).

14. With respect to claims 14 and 15, Gilbert invention does not specifically disclose the average crystal size and alpha value of the dewaxing catalyst. Since Gilbert is using similar zeolites as claimed by the Applicant, it is expected that the average crystal size and the alpha value in Gilbert invention should necessarily be in the claimed range.

15. Claim 17 has all the limitations of claim 1 with the only difference being the absence of step (d) of separation of gas oil fraction from the fraction boiling below gas oil fraction.

Limitations of claim 1 have already been discussed.

Gilbert invention further discloses that the effluent from the step (c) (dewaxing) is optionally subjected to hydrofinishing prior to step (d) or after step (d) (separation of low-boiling non-base oil fractions by distillation) (See page 11, lines 7-12).

16. With respect to claim 18, Gilbert discloses that the zeolite content of dewaxing catalyst is 30 wt% (See page 17, lines 26-30).

17. With respect to claims 19 and 22, Gilbert discloses that the low acidity refractory binder material is selected from silica, zirconia, titanium dioxide, germanium dioxide, boria and mixtures of two or more thereof (See page 10, lines 5-8). Gilbert also discloses that silica is essentially free of alumina (See page 10, lines 3-5).

18. With respect to claims 20 and 21, Gilbert invention does not specifically disclose the average crystal size and alpha value of the dewaxing catalyst. Since Gilbert is using similar zeolites as claimed by the Applicant, it is expected that the average crystal size and the alpha value in Gilbert invention should necessarily be in the claimed range.

19. With respect to claim 23, Gilbert invention discloses that a part of full range residue product is recycled to be mixed with the crude feed (See figure 1; page 13, lines 4-7). It is within the skilled art to recycle an optimum amount for an efficient process.

20. With respect to claim 24, Gilbert invention discloses using FT derived isomerized paraffin fraction in the dewaxing step (See page 1, lines 4-14). Thus, it would have been obvious to one skilled in the art at the time of invention to modify Gilbert invention and add an isomerized paraffin fraction to the full range residue and increase the production of dewaxed product.

Double Patenting

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1-8 and 12-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/591,115. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention and the copending Application '115, both are drawn to a process of making multiple grades of base oil production by similar steps of hydrocracking, separation, catalytic dewaxing, hydrotreating/hydrofinishing and isolating into different fractions. The only difference is that the present invention claims a MTW zeolite and a Group VIII metal catalyst for

dewaxing. It would have been obvious to one skilled in the art at the time of invention to modify the claim(s) of copending Application '115 and use a MTW zeolite because any intermediate pore zeolite, including MTW, can be used in the dewaxing step. Also, the present invention claims a gas oil product produced in the process, not claimed in the copending Application '115. It would have been obvious to one skilled in the art at the time of invention to modify the claim(s) of copending Application '115 and claim a gas oil product because the invention is producing gas oil also.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

23. Applicant's arguments filed 03/30/2009 have been fully considered but they are not persuasive.

24. In the arguments on page 7 (paragraph 1-2), the Applicant argues that the amendment to the independent claim and the difference of the claimed subject matter over the teachings of the prior art the claims are allowable.

The Applicant's argument is not persuasive because the amended claim 1, and its dependent claims are obvious over Gilbert in view of Chen as discussed in the Office action above.

25. On page 7 (paragraph 3) of the response, Applicant has not challenged the provisional obviousness-type double patenting rejection above and is deferring filing of a terminal disclaimer on indication of allowable subject matter.

26. In the arguments on page 7 (paragraph 4-5), the Applicant argues that new claims 12-24 are patentable.

The Applicant's argument is not persuasive because claims 12-24 are obvious over Gilbert in view of Chen as discussed in the Office action above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PREM C. SINGH whose telephone number is (571)272-6381. The examiner can normally be reached on 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS 051809
/In Suk Bullock/

Primary Examiner, Art Unit 1797